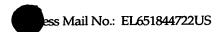
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## **CLAIMS**:

## What is claimed is:

1.	An	apparatus	comprising
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- a combination digital signal and radio frequency connector for directly coupling a motherboard to a radio frequency module board.
- The apparatus of Claim 1, further comprising a pin and receptacle
  connection for a signal line in the radio frequency connector.
- 1 3. The apparatus of Claim 2, wherein the receptacle comprises a sheet of 2 metal stamped and rolled into a tulip shape.
  - 4. The apparatus of Claim 1, further comprising a spring cage and barrel connection surrounding the ground line.
- The apparatus of Claim 4, wherein the spring cage and barrel
  comprise a sheet metal stamped and rolled into a substantially cylindrical
  form.
- 1 6. The apparatus of Claim 4, wherein the spring cage comprises finger springs having flexural compliance that retains a close contact against an inner surface of the barrel upon mating.
- 1 7. An apparatus comprising:
- a radio frequency board having a combination digital signal and radio frequency connector adapted for directly coupling to a motherboard for a computer.
- 1 8. The apparatus of Claim 7, further comprising a pin and receptacle connection for a signal line in the radio frequency connector.
- 9. The apparatus of Claim 8, wherein the receptacle comprises a sheet of metal stamped and rolled into a tulip shape.

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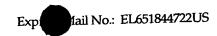
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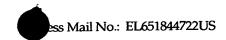
- 1 10. The apparatus of Claim 7, further comprising a spring cage and barrel connection surrounding the ground line.
- 1 11. The apparatus of Claim 10, wherein the spring cage and barrel
- 2 comprise a sheet of metal stamped and rolled into a substantially cylindrical
- 3 form.
- 1 12. The apparatus of Claim 10, wherein the spring cage comprises finger
- 2 springs having flexural compliance that retains a close contact against an
- 3 inner surface of the barrel upon mating.
  - 13. An apparatus comprising:

a pin and receptacle connection for transferring a signal coupled between a radio frequency module compatible with a mobile computer motherboard and a motherboard in a mobile computer; and

a spring cage and barrel connection coupled around the pin and receptacle connection for transferring ground, wherein the apparatus comprises a radio frequency coaxial direct board to board connection.

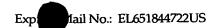
- 1 14. The apparatus of Claim 13, wherein the receptacle comprises a sheet 2 metal stamped and rolled into a tulip shape.
- 1 15. The apparatus of Claim 13, wherein the receptacle and the spring cage
- 2 are made from at least one of phosphor bronze, beryllium copper and brass.
- 1 16. The apparatus of Claim 13, wherein the pin and barrel comprise a
- 2 copper alloy.
- 1 17. The apparatus of Claim 16, wherein copper alloy is plated to avoid
- 2 corroding.
- 1 18. The apparatus of Claim 13, wherein the spring cage and barrel
- 2 comprise a sheet metal stamped and rolled into a substantially cylindrical
- 3 form.

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1	19.	The apparatus of Claim 13, wherein the spring cage comprises finger				
2	sprin	springs having flexural compliance that retains a close contact against an				
3	inner	inner surface of the barrel upon mating.				
1	20.	The apparatus of Claim 13, wherein the ground connection from the				
2		g cage and barrel are each coupled to a surface co-planar waveguide				
3	ground on their respective boards.					
1	21.	The apparatus of Claim 20, wherein the co-planar waveguide				
2	grou	grounds are coupled to their respective printed circuit board ground planes				
3	by vias in the boards.					
1	22.	An apparatus comprising:				
2		a direct board to board coaxial connection having a male portion and				
3	a fen	a female portion, wherein one of the male portion or female portion is				
4	coup	coupled to a computer motherboard and the other of the male portion or				
5	fema	female portion is coupled to a radio frequency module card such that the				
6	radio	frequency module card is removeably coupled to the computer				
7	moth	erboard by the direct board to board coaxial connection.				
1	23.	The apparatus of Claim 22, wherein the coaxial connection comprises				
2	a pin	and receptacle connection for transferring the signal, and a spring cage				
3	and l	parrel connection for transferring the ground.				
1	24.	The apparatus of Claim 23, wherein the spring cage and barrel				
2	trans	transfer the ground to a surface co-planar waveguide ground and then to				
3	the ground planes of the boards through vias.					
1	25.	A method comprising:				
2		forming a signal pin;				
3		stamping a ground shield spring cage from a sheet of metal;				
4		rolling the ground shield spring cage to form a cage with finger				
5	sprin	gs for gripping the inside of a ground barrel;				

stamping a ground barrel from a sheet of metal;



7	rolling the ground barrel into a cylinder;					
8	stamping a signal pin receptacle from a sheet of metal;					
9	rolling the signal pin receptacle to form a cylinder with a spring end					
10	that resembles a tulip;					
11	plating the pin and the barrel;					
12	assembling the signal pin, ground spring cage, and a housing to form					
13	a male coaxial connector by press interference fitting; and					
14	assembling the signal pin receptacle, ground barrel and a housing to					
15	form a female coaxial connector by press interference fitting.					
1	26. The method of Claim 25, further comprising:					
2	fabricating the ground shield spring cage and signal pin receptacle					
3	from one of the group comprising phosphor bronze, beryllium copper, or					
4	brass.					
1	27. The method of Claim 26, further comprising:					
2	fabricating the signal pin and outer ground shield from a copper					
3	alloy.					
1	28. A method comprising:					
2	aligning a radio frequency module board compatible with a computer					
3	motherboard with a computer motherboard; and					
4	connecting the radio frequency module board to the motherboard of a					
5	computer using direct board to board radio frequency coaxial connectors					
6	wherein the connectors comprise a signal pin, a signal pin receptacle, a					
7	ground shield spring cage and a ground shield barrel; and the signal pin					
8	receptacle, ground shield spring cage and ground shield barrel are fabricated					
9	from stamped sheets of metal.					
1	29. The method of Claim 28, further comprising:					
2	coupling the signal pin to the signal pin receptacle to form a signal					
3	line connection between the radio frequency module board and the					
1	computer methorheard					

1	30.	The method of Claim 28, further comprising:
2		coupling the ground shield spring cage to the ground shield barrel to
3	form	a ground shield connection for the signal line connection between the
4	radio	o frequency module board and the computer motherboard.